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A NEW SPECIES OF *ANDRENA* (*MICRANDRENA*) FROM COLORADO, WITH OTHER NOTES ON THE GROUP (HYMENOPTERA: APOIDEA)

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The new species described below, so far known only in the female, closely resembles *A. melanochroa* Cockerell, and runs to that species in the key in Ribble's monograph of the subgenus *Micrandrena* (1968). Both species are included in Ribble's species group of *A. piperi* Viereck. The key can be modified to include the new species by the following change in the vicinity of couplet 24:

24. Enclosure of the propodeum with at least dorsal surface very granular, so as to appear beaded, contrasting with smoother surface of rest of propodeum 24a
Enclosure of propodeum not especially granular, little contrast between enclosure and rest of propodeum 25

24a. Facial fovea abruptly narrowed in lower third to half or less the width of upper portion, integument between eye and narrow part of fovea widened to at least half width of adjacent fovea; clypeus with a few shallow, wide irregular wrinkles, lower portion with few very irregularly spaced strong punctures, upper half reticulate, more evenly and finely punctate, somewhat flattened; process of labrum narrowly triangular, pointed ..... *kristina,* n. sp.
Facial fovea normal, only gradually narrowed below, integumental strip between narrow portion and eye not widened; clypeus evenly convex, lower shining portion rather evenly and finely punctured, becoming impunctate toward upper margin; process of labrum transverse, broadly rounded or subrectangular .... *melanochroa* Cockerell

25. ..... *piperi,* etc.

In the Boulder area, *melanochroa* is the common *Micrandrena* of *Potentilla fissa* Nutt., while *kristina* is found on *Physaria bellii* G. A. Mulligan, a local endemic crucifer.

Andrena kristina Lanham, new species

Female.—Length 7 mm, forewing 6 mm. *Integument* black, except for hyaline amber apical margins of abdominal terga and reddish brown flagella.

Head having width/length ratio 4.8/4.0, measuring between outer eye orbits and from vertex to bottom of clypeus, hairs white. Clypeus with a few irregular shallow wrinkles, especially above; lower half shining, with a few coarse and irregularly spaced punctures, upper half flattened, reticulate, more regularly punctured. Face above clypeus vertically striate, above ocelli becoming coarsely granular, with polished impunctate area at dorsal ends of compound eyes. Facial foveae with dorsal ends extending slightly above eyes, width here slightly less than ½ distance between eye and lateral ocellus, extending below beyond antennal insertions but not as far as upper margin of clypeus, lower third abruptly narrowed to ½–⅓ width of upper portion by incurving inner margin of fovea and increasing width of integument between fovea and eye, which becomes more than ½ as wide as fovea. Antennae with scape plus pedicel reaching to middle of lower ocellus; 1st segment of flagellum longer than 2 + 3 on outer margins. Process of labrum narrowly triangular. Mouthparts normal for the *piperi* group, 1st 3 maxillary segments about equal to length of galea. *Thorax.* Pubescence on the thorax long for the group, sparse and erect dorsally, denser and decumbent on sides, color white tending to brown on median posterior surfaces of dorsum. Pronotum without shoulders, but with strong groove running anterio-medially from base of pronotal lobe. Mesonotum shining but strongly reticulate, punctures small, sparse, 4–5 puncture-widths apart, mesoscutum about the same; metanotum coarsely reticulate; propodeum coarsely beaded, with delicate but distinct ridges on dorsal face, sculpture at edges of enclosure about same as that of adjacent part of propodeum. Corbicula without anterior fringe, dorsal fringe poorly developed, interior with a few long simple hairs widely scattered over most of surface, integument of interior shining, rather coarsely reticulate. Hind leg with trochanteral floccus complete but sparse; hairs of tibial scopa simple, long, the hairs on posterior margin about as long as width of tibia at its widest point, entire scopa moderately loose and sparse; all hairs white, except for dark tuft at tibio-femoral junction; tarsal claw with tooth fully developed, of size normal for the *piperi* group. Wing membranes clear, veins amber, 1st transverse cubital vein ending 1 to 3 vein widths distad from pterostigma, basal vein falling well distad of transverse medial nervure. *Abdomen* with terga semi-shining, reticulation moderately coarse. Tergum 1 without apical hair band, 2 with widely interrupted weak white hair band, 3 with band narrowly interrupted, 4 with band entire, caudal fimbria entirely brown tinged with orange; terga anterior to fimbria without long hairs dorsally; pygidial plate finely granular, narrowly rounded, with weakly developed raised central triangular area.

Type material.—Holotype, female, 4 miles north Boulder, COLORADO, 5500 feet, 23 May 1980, collected at flowers *Physaria bellii* (U. N. Lanham). Seventeen paratypes, females: 2 with same data as holotype; 4 same except 24 and 25 May 1980 (K. Neff); 8 from 10 miles SW Loveland, COLORADO,

26 May 1980, collected at flowers *Physaria bellii* (U. N. Lanham); 1 from 3 miles east Lyons, COLORADO, 7 June 1980 (U. N. Lanham and K. Neff); 2 from 12 miles north Ft. Collins, COLORADO, 7 June 1980 (U. N. Lanham and K. Neff).

The name is pronounced with the second syllable accented and the "i" as in mile.

All localities named in the type description are on or very near the outcrop of Cretaceous Niobrara limestone and shale that lies at the eastern base of the foothills of the Front Range. This habitat is described in "Some Colorado *Andrena* of the subgenus *Scaphandrena* of presumed hybrid origin . . . ," Lanham, 1981.

Of the 11 species of the *piperi* group of *Micrandrena* only three, including *piperi,* show a strong preference for Cruciferae.

The rather remarkable *primulifrons* group of *Micrandrena* is apparently oligolectic on crucifers, according to Ribble. The group is distinctive on account of the heavy and coarsely punctate integument. The two species of the group, *primulifrons* Casad and *trapezoidea* Viereck have previously been known only from the Southwest. It is therefore of interest to find a species that matches Ribble's description of *trapezoidea* on crucifers in northeastern Colorado. I collected two females and a male at Briggsdale, Weld Co., 19 and 21 May 1979 from flowers of *Descuraina* and 2 females, 10 miles SW Loveland, 26 May 1980 from *Physaria bellii.* In his *Micrandrena* paper Ribble suggests that the *primulifrons* group is annectant between that subgenus and *Scaphandrena.* His monograph of *Scaphandrena* (1974) contains the statement that the group should be transferred to *Scaphandrena,* apparently as an afterthought, since the group is not included in the key to species.

Literature Cited

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